

Remarks

Favorable reconsideration of this application, in view of the above amendments and in light of the following remarks and discussion, is respectfully requested.

Claims 2, 4-7, 18, and 21-29 are currently pending in the application; independent Claims 2, 18, and 21 having been amended by way of the present response. Applicants respectfully assert that support for the changes to the claims is self-evident from the originally filed disclosure, including the original claims, and that therefore no new matter has been added.

Initially, Applicants express thanks for the Examiner's indication that Claims 4-7 are allowed.

In the outstanding Office Action, Claims 2, 18, and 21-29 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,901,951 to Yamaguchi. Applicants respectfully request that the rejection of the claims be withdrawn for the following reasons.

The present invention is directed to sheet feeding apparatuses, image forming apparatuses, and sheet feeding methods. Independent Claims 2 and 18 recite at least one driven gear disposed on a cantilever shaft, the at least one driven gear having first and second pairs of adjacent teeth of a same set of teeth, the first pair of adjacent teeth separated by a first gap and the second pair of adjacent teeth separated by a second gap less than the first gap. At least one driving gear includes a set of teeth adapted to engage the first and second pairs of adjacent teeth to drive the at least one driven gear. A reverse roller is pressed into contact with a feed roller, the reverse roller supported on an end of the cantilever shaft and adapted to be rotated in a sheet feeding direction and a reverse direction and to separate and convey sheet media held between the feed roller and the reverse roller. Independent Claim 21 recites feeding sheet media between a feed roller and a reverse roller pressed into contact with the feed roller, the reverse roller adapted to be rotated by a driven gear and to separate and

convey the sheet media held between the feed roller and the reverse roller. First and second pairs of adjacent teeth of a same set of teeth of the driven gear are engaged with a set of teeth of the driving gear, the first pair of adjacent teeth separated by a first gap and the second pair of adjacent teeth separated by a second gap less than the first gap.

Yamaguchi is directed to a sheet supplying apparatus. As shown in Figures 5-7, for example, of Yamaguchi, rotation of a regist driven roller 9 is transmitted to a reverse rotation roller 7 through a gearing system comprising first to fourth gears 20, 21, 22, and 23. The fourth gear 23 is rotated integrally with the reverse rotation roller 7.¹ Gear 23 has two gear portions 23a, 23b which are integral with each other, and, the gear 22 as an intermittent gear has a gear portion 22a having two teeth capable of engaging by the gear portion 23a of the gear 23, and a gear portion 22b having a groove capable of engaging by the gear portion 23b of the gear 23.²

Applicants respectfully assert that Yamaguchi does not teach, however, the claimed features of a driven gear disposed on a cantilever shaft on which a reverse roller is supported, the driven gear having first and second pairs of adjacent teeth of a same set of teeth, the first pair of adjacent teeth separated by a first gap and the second pair of adjacent teeth separated by a second gap less than the first gap, as recited in independent Claims 2 and 18.

Specifically, Applicants respectfully assert that neither one of the set of teeth of the gear portion 23a or the set of teeth of the gear portion 23b of the gear 23 rotated with the reverse rotation roller 7 has both first and second pairs of adjacent teeth separated by first and second gaps different from one another, for example.

In particular, independent Claims 2 and 18 recite “at least one driven gear disposed on the cantilever shaft, the at least one driven gear having first and second pairs of adjacent teeth of a same set of teeth, the first pair of adjacent teeth separated by a first gap and the second

¹ Column 4, lines 25-31.

² Column 6, lines 11-17.

pair of adjacent teeth separated by a second gap less than the first gap.” Thus, Applicants respectfully request that the rejection of independent Claims 2 and 18 under 35 U.S.C. § 102(b) be withdrawn and the independent claims allowed.

Regarding the rejection of independent Claim 21, for reasons similar to those discussed above, Applicants respectfully assert that Yamaguchi also does not teach the claimed features of engaging first and second pairs of adjacent teeth of a same set of teeth of a driven gear with a set of teeth of a driving gear, the first pair of adjacent teeth separated by a first gap and the second pair of adjacent teeth separated by a second gap less than the first gap.

Specifically, independent Claim 21 recites “engaging first and second pairs of adjacent teeth of a same set of teeth of the driven gear with a set of teeth of the driving gear, the first pair of adjacent teeth separated by a first gap and the second pair of adjacent teeth separated by a second gap less than the first gap.” Thus, Applicants respectfully request that the rejection of independent Claim 21 under 35 U.S.C. § 102(b) be withdrawn and the independent claim allowed.

Dependent Claims 22-29 are allowable for the same reasons as the independent claims from which they depend, as well as for their own features. Thus, Applicants respectfully request that the rejection of dependent Claims 22-29 under 35 U.S.C. § 102(b) be withdrawn and the dependent claims allowed.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 2, 4-7, 18, and 21-29 is earnestly solicited.

Application No. 09/928,352
Reply to Office Action of February 23, 2004

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below listed telephone number.

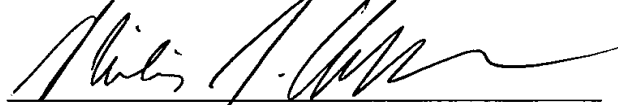
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Respectfully submitted,

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